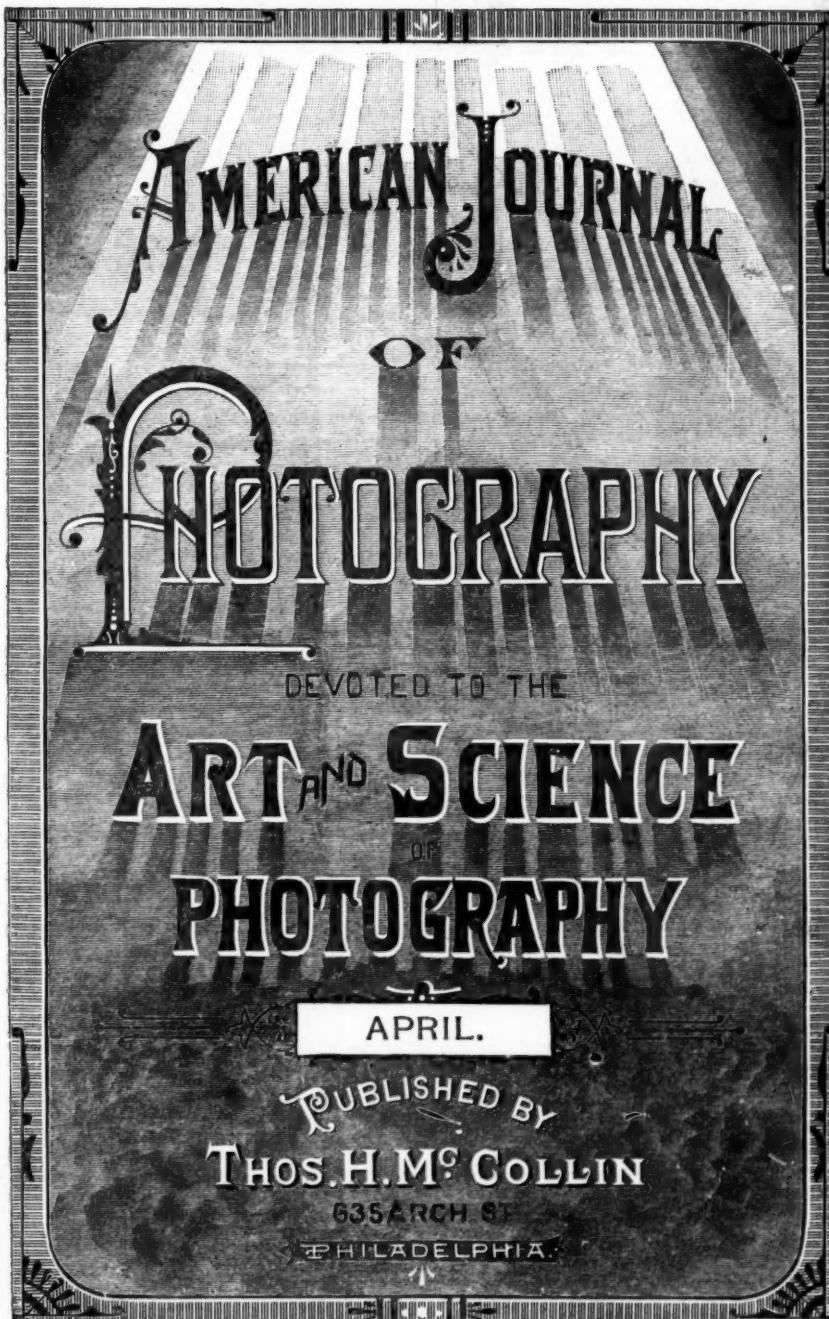


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## REPRODUCING NEGATIVES.

BY ELLERSLIE WALLACE.

It will occasionally happen both in the routine of the portrait gallery and in the lighter labors of the amateur, that a negative has to be reproduced or duplicated.

Could the operator foresee that he would require more than one negative of a certain subject, he would very wisely prefer to duplicate the exposure upon the spot rather than to go through the tedious and uncertain process of reproduction, and we would here most strongly urge that whenever the likelihood of requiring more than one negative arises, the duplicates be made then and there, for a few trials will be enough to convince the most enthusiastic that reproduction is a subject very difficult at best, and with some kinds of negatives an utter impossibility—at least, so far as even a passably good result is concerned.

A curious and very ingenious process for reproducing negatives at *one operation* has been known for some time among photographic chemists, and was highly endorsed by no less an authority than Obernetter, of Munich. It was briefly as follows: a gelatine plate having been exposed as usual under the negative was developed in ferrous oxalate until blackened through on the reverse side. The plate was washed and a solution of bichromate of potash containing nitric acid (chromic acid, in fact), poured over the film until the dark color disappeared. After again washing, the plate was exposed to diffused light for

a few seconds, taken back to the dark room and re-immersed in the ferrous oxalate, which acted on the remaining bromide of silver and developed a *negative* image. The plate was then fixed and dried. Obernetter, in speaking of the process, admitted that a special emulsion containing but a small proportion of gelatine, though rich in silver bromide, was required. The experiments which we ourselves made with such plates as we could lay our hands upon, were entirely unsatisfactory so far as perfection of result was concerned, though the negative image was certainly there, so that we would not utterly condemn so simple and ingenious a process. It might very well be that the plates we used were not suited to this special work. To those who are fond of experimenting a little out of the beaten track, we can recommend this as very interesting, and containing the possibility of great simplification of a troublesome operation. Efforts entirely analogous have been made with collodio-bromide films.

Laying this aside, then, the standard method of reproducing negatives remains as it has always been—first making a transparent positive and then copying this into a negative.

Although great care and skill are required throughout the process, we may emphasize the importance of having the transparent positive just right before proceeding further. Or, rather, let us go a step back and say that a negative to be reproduced must be sharp, clean and of only moderate density. If it be one of the "cast-iron" variety, it will never be possible to obtain a good result. Any little specks, flaws or pin-holes must be carefully touched out before making the positive.

The question now arises as to the pro-

cess by which the positive is to be made. Wet collodion we believe to be quite unsuitable. The deposit on a dry film is far finer and better in every way : the microscope will soon prove the superior fineness of a deposit on a dry plate. Any of the dry collodion processes such as we alluded to in last month's article will answer. Or, if gelatine plates of the kind specially adapted for transparent positives be at hand, they may be successfully used. No special formulae need be given here for making the positive ; it is rather the *quality* of the latter that requires attention. The positive must be fully but not over-timed ; the detail both in lights and shadows must be plainly visible, which, of course, infers that the image must not be dense, but rather the contrary. An excellent method of treating the positive is to bring it up rather thin or even flat under the developer, and then after fixing and washing, to apply a very weak solution of mercury until the image is toned and slightly strengthened. The mercury is to be simply washed off and not followed by any other chemical. As might be expected, the plate thus treated will not keep, especially if exposed to the light, but it will retain its good qualities long enough for the reproduced negatives to be made from it. There is something quite peculiar in the quality of a plate thus treated, and we know of no other method that will yield so fine a result.

In England, where the carbon process is largely worked, even by amateurs, a transparent positive made on the carbon tissue is the preferred form. We need not enlarge upon this, as for the present at least, this process seems to be no favorite in America.

The albumen process is certainly entitled to respectful consideration for reproducing even at this late day. The fine deposit and exquisite perfection of half-tone rendering it most adaptable for the positive. It may be worked in this way : clean the glass and rub it off with French chalk. Coat with any good collodion, and, when set, lay the plate in a pan of water until greasiness disappears, then rinse under the tap. Coat with iodized albumen and dry. Then sensitize in aceto-nitrate of silver, wash well and dry. Expose under the negative and

develop with a *very weak* alkaline developer, bringing up the strength with acid pyro. and silver ; or if preferred, the exposure may be lengthened and the development conducted with acid pyro. and silver alone, in which case the developer should be lukewarm, and heat applied to the plate by a spirit lamp during the operation. The plate is fixed in hypo. and finished as usual. Care must be taken not to over develop the image, the color being powerfully non-actinic. The iodized albumen may be made as follows :

White of Egg . . . . .	5 ounces.
Iodide of Potassium . . . . .	35 grains.
White Sugar . . . . .	300 grains.
Tincture of Iodine. . . . .	3 drops.
Water . . . . .	½ ounce.

Dissolve the iodide of potassium in the water, add the tincture of iodine, and mix with the albumen. Beat the whole to a stiff froth on a china plate with a *silver* fork. Let it liquefy again and finally add the sugar and strain through muslin, after which one-half drachm of ammonia may be added. Keep well corked in a cool place.

#### *Aceto Nitrate Bath.*

Nitrate Silver . . . . .	400 grains.
Water . . . . .	10 ounces.
Acetic Acid, glacial . . . . .	1 ounce.
Nitric Acid . . . . .	2½ drachms

This is intended only for contact printing. It will also be found most admirable for lantern slides. If a scum like deposit forms on the film during development, it may be removed by rubbing the film gently with a plug of cotton wet with water, holding the plate under the tap at the same time. We can only add in recommending this process, that it is but a comparatively short time since numerous photographers in Philadelphia paid a high price for the formula, which was kept secret. The quality of the positive is so fine when the process is properly worked, that it was originally intended for the enlarging and reproduction of negatives.

Our last month's article treated of collodio-bromide as applied to lantern slides, but we can save considerable space and labor here by referring our readers to the practical details there given, for this process is also well adapted both for making

the positive and the reproduced negative. As a proof of what can be done, we may quote one of our own prints that was made from a reproduced and enlarged negative by this process, which when framed with other prints direct from the negative, passed the ordeal of the judges at the late Exhibition of the Photographic Society, without adverse remark, and was favored with a diploma.

The practical part of the work will have to be studied out patiently. It is particularly in exposure and development that care is required. Remember not to make the positive too dense, but to preserve every atom of detail both in light and shadow. Contact printing for the positive we believe to be far preferable to the camera. The glass should be selected flat on purpose, and, if necessary, the springs of the printing frame may be replaced by screws so as to insure contact between the films. Keep clear of over-development and great density.

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#### PHOTOGRAPHY A PICTORIAL ART.

Read before the Camera Club, Thursday,  
March 11, 1886.

BY P. H. EMERSON, B.A., M.B. (Cantab).

In approaching the subject of Art, one is appalled by its difficulty and perplexity, for Art is indefinable, although it is possible to say what is not Art. The misconceptions and confusion in Art matters are due to the literature of the subject. From early times nearly all writers on Art have been lay-men. These men have discussed Art and Art matters from the literary view, whilst the artists have kept silence and only expressed their opinions by their works. Hence the unthinking public have had their opinion formed for them, and as these opinions were evolved from the inner consciousness of the writers, and not based on any logical first principles, it necessarily followed that opinion on Art matters shifted like a weathercock. Now, one school was held up as the pink of perfection, only to be ostracised from the realms of good taste a few decades later. And until quite recently the matter was quite hopeless. People said: "Art is a matter of taste, my taste is as good as

yours, I say this picture is better than that, and now what have you to say?" To such argument there was then no answer. Any one who has read the history of Art, and a very interesting history it is, will be surprised at, and will look with pity on the unthinking millions who have been swayed by opinions based on no reason. The days of metaphysics are over, and with them, we hope, has died all that class of pernicious illogical literature, evolved from the inner consciousness of man.

In our own day, the powerful effects of fine writing have had a most hurtful influence on the great British public in the artistic sense. One of these spasmodic elegants of Art literature has made it a point to scoff at any connection between science and Art, and has flooded the world, in beautiful writing in which his power lies, with dogmatic assertions and illogical statements. He has treated botany, photography, political economy, and I know not what other subjects, in a style which had it been the work of a sixth form boy at a good school, would have secured a well merited punishment. Yet these false stones, in their beautiful setting of fine writing, have procured him as many worshippers as his hero himself. A lesser light than he, a poor creature, who has essayed to stride in his master's footsteps, has, with a little more truth, but with much less beauty and originality, devoted whole pages to attack and denounce photography. It is a question whether this writer is worthy of a happy despatch; if so, I purpose killing him on a more public stage than this; and lastly, in our own branch of Art, one writer has served up a senseless jargon of quotations from literary writers on Art matters, a confused bundle of lines which take all sorts of ridiculous directions, and which this worthy impresses are necessary to make a picture. The bulk of the work contains the quintessence of a blend of literary fallacies and Art anachronisms, and yet, in spite of all these wiseacres, many a beautiful picture has been produced which has defied their every law. Let us briefly run through the different periods of Art, and see how it was hampered and enslaved by external influences.

The earliest Art was the scratchings of the men of the stone age upon their rocks, reproductions of which I pass round. Next we come to the fascinating period of Egyptian history: Egyptian pictorial Art as handed down to us on the mural paintings of the tombs are, as you will see by the specimens, crude and commonplace. Akin to these are the remains we have of the monarchies of Western Asia. We then come to the cultivated and wonderful Greeks. Their plastic Art is well known to most of us, and notwithstanding its age, is as beautiful to-day, and as much admired by artists, as it was then. Why is this? Is it to be explained why the Venus of Milo is more beautiful than the later production of Michael Angelo, the hyperthrophic Moses? This will be seen later on. I pass round a few photographs from the antique, and a few from the works of Michael Angelo. Comparisons are unfortunate for Michael Angelo. Woltman and Woerman tell us that no single specimen of the works of the great Greek masters has come down to us, but judging from the enthusiastic tone of the classical authors, we may surmise that that artistic people attained as great proficiency in some branches of pictorial Art as we know they did in the plastic Art. I pass round a photograph of one of the mural paintings at Pompeii, but these were only the work of journeymen.

When Rome began to subjugate Greece, Art went into slavery. The early Christians employed it as a means to propagate their doctrines. The oriental idea of teaching by parables spread in their community, and we find the art of the catacombs enslaved to the new mysticism which arose on the Pagan ruins. The gorgeous monstrosities of Byzantium were also made a serf to religion. At last, in the twelfth century, we find the Art of Italy developed into a national art, but still a slave to the church. Beautiful things were done, but alas, the great men of that period had to paint to order, to paint what are called works of imagination, in other words, untruths; and what was the consequence? A surfeit of madonnas, annunciations, presentations, massacres and other subjects, which are diametrically opposed to true

Art. With the great Leonard da Vinci a new departure was made, portraits and lay subjects became more frequent. The portrait I now pass round is the famous Mona Lisa, Da Vinci's great work. Works of all kinds were now produced, but still Art was in slavery. Pictures were judged by pre-existing standards—a most fatal error.

In a brief paper like the present it is perfectly impossible to finish even a rough sketch of the subject. Art went from one slavery to another, religion, morals, courts, kings, the literati, all in turn ruled it, until there was born in Suffolk one John Constable, the son of a miller. With a clear head, and the freshness and originality of genius, he sought to find beauty in nature, and not in picture galleries. A few of his pictures went to Paris, and the cultured few saw that he was right, that his was truth. Rousseau, the father of the French modern school, boldly struck aside and followed Constable. Corot, the tender, followed, but not to his full bent; then came Jean Francois Millette, honored name, and later still the young Le Page, who died, alas! too young. These were the pioneers who established that naturalistic school which is now in the van of this 19th century.

I have found the greatest difficulty in making my remarks brief; it is as difficult to write a little about a great subject as it is to write about nothing. We must now leave this fascinating development of Art, and show how and why photography is a fine Art. *Pictorial Art is man's expression by means of pictures of that which he considers beautiful in nature. Now any Art is a fine Art which can, by pictures, express these beauties, and that Art is best which best expresses them.* Let us begin with painting the master pictorial Art, for until we can reproduce the colors of nature, we can never equal painting; but all other branches of pictorial Art we are able to surpass. Painting alone is our master. Now let us see how far painting can reproduce nature. Professor Helmholtz has worked this question out for us, and to him I am indebted for the following notes. In reproducing nature, as he says, one of the principal things is the quantitative relation between luminous intensities. "If the artist

is to imitate exactly the impression which the object produces on our eye, he ought to be able to dispose of lightness and darkness equal to that which nature offers. But of this there can be no idea. Let me give a case in point. Let there be, in a picture gallery, a desert scene, in which a procession of Bedouins shrouded in white, and of dark negroes, marches under the burning sunshine; close to it a bluish moonlight scene, where the moon was reflected in the water, and groups of trees and human forms, are seen to be faintly indicated in the darkness. You know from experience that both pictures, if they are well done, can produce with surprising vividness the representation of their objects; and yet, in both pictures, the brightest parts are produced with the same white lead, which is but slightly altered by admixtures; while the darkest parts are produced with the same black, both being hung on the same wall, share the same light, and the brightest as well as the darkest parts of the two scarcely differ as concerns the degree of their brightness. How is it, however, with the actual degree of brightness represented? Now, although the pictures scarcely differ as regards the degrees of their brightness, yet in nature the sun is 800,000 times brighter than the moon; but as pictures are lighted by reflected light, the brightest white in a picture has about 1-20 the brightness of white directly lighted by the sun. Hence it will be seen that white surfaces in pictures in sunlight are much less bright than in reality, and the moonlight whites of pictures are much brighter than they are in reality. How, then, is it that there is any similarity between the picture and the reality? This is explained by the physiological process of fatigue. Any sense, as we know, is dulled by fatigue; to wit, the effect of loud noises and bright lights on hearing and seeing. The eye of the man in the desert is dulled by the dazzling sunlight, whilst the eye of the wanderer by moonlight has been raised to an extreme degree of sensitiveness. What, then, must the painter do? He must endeavor to produce by his colors in the moderately sensitive eye of the spectator in a picture gallery the same effect as seen in the sunlight or moonlight. To accom-

plish this, he gives a translation of his impression into another scale. We know, regarding all sensations, that any particular sense is so coarse that it cannot distinguish differences between certain wide limits. The finer distinctions of light cannot, therefore, be appreciated by the eye. The painter, therefore, must, as nearly as he can, give the same *ratio* of brightness to his colors as that which actually exists. Helmholtz says that "perfect artistic painting is only reached when we have succeeded in imitating the action of light upon the eye, and not merely the pigments."

Now let me give you an example of the fallacy of the pre-Raphaelites. They imitated the pigments, not the light. I will illustrate my meaning with this cigar box. We thus see that much is impossible in Art, and that one of the greatest points is rendering correctly the relative values or ratio of luminous intensities. Now we know that the effect of binocular vision is to force a scene on our perception as a plane surface; hence the painter has in this point no pull over the photographic lens, but rather the reverse. Of the greatest importance to a picture also is aerial perspective, that is, the scattering of light by atmospheric turbidity, more generally moisture. This turbidity is most important, and the lack of it dwarfs distant objects; hence from the lack of it in the higher Alps, we get these caricatures which yearly adorn our galleries. These dwarfed maps of mountain peaks seem rather in fashion just now—heaven only knows why. No painter can do them justice, and no good one ever attempts them, and yet photographers, who are not so able to represent them, are constantly doing so, and, to show the prevalent ignorance, these photographs are often honored with the highest awards because of their sharpness and clearness. Letters have been written suggesting that English and foreign views should not be classed together, and much other nonsense of this description, all simply showing ignorance.

A work of Art is, as we have said, an expression by means of pictures of what is beautiful, and the points to gauge in a picture are to notice what a man wishes to express, and how well he has expressed it. I

know Switzerland, and love it well ; but I would no more attempt to make a picture of a peak than I would of a donkey engine. A peak, shrouded and accentuated by aerial turbidity, and just peeping into an Alpine subject, might from its mystery and sentiment add to the artistic value of a foreground subject. But the usual photographs of peaks could be of interest only in a Baedeker. This turbidity can be well rendered in a photograph. Painters, as we do, use optical instruments, such as Claude glasses, prisms, and the camera itself. The whole point, then, that the painter strives to do is to render, by any means in his power, as true an impression of any picture which he wishes to express as possible. A photographic artist strives for the same end, and in two points only does he fall short of the painter—in color, and in ability to render so accurately the relative values, although this is, to a great extent, compensated for by the tone of the picture. I here use the word in its artistic sense, and not in its misused photographic sense. How, then, is photography superior to etching, wood-cutting, charcoal drawing ? The drawing of the lens is not to be equaled by any man ; the tones of a correctly and suitably printed picture far surpass those of any other black and white process. An etching, in fact, has no tones, except those supplied by the printer. As I have said before, if it falls short anywhere, it is in the rendering of the relative values, but the perfection of the tone corrects this in a great measure. There is ample room for selection, judgment, and posing, and, in a word, in capable hands, a finished photograph is a work of Art. Again, it is evident that the translation of pictures by photogravure, for the same reasons given above, will be superior to that of any engraving. But we must not forget that nine-tenths of photographs are no more works of Art than the chromos, lithos., and bad paintings which adorn the numerous shops and galleries.

Thus we see that Art has at last found a scientific basis, and can be rationally discussed, and that the modern school is the school which has adopted this rational view ; and I think I am right in saying that I was the first to base the claims of photography

as a fine Art on these grounds, and I venture to predict that the day will come when photographs will be admitted to hang on the walls of the Royal Academy.

Reference was made in the earlier part of this paper to Greek statues, and it is now easy to understand why they have endured so long, and are the beau ideals of the artists to-day, as they were of the artists of Ancient Greece. The secret all lies in the fact that they were done from nature, from actual living models—Phidias and Praxiteles tried their utmost to express in an artistic way, in living marble, the human being before them. They succeeded, and these statues to-day are of more value than the monstrosities of the middle ages, and are unequaled by the moderns. In closing I would say, the modern school of painting and photography are at one ; their aims are similar, their principles are rational, and they link one into the other ; and will in time, I feel confident, walk hand in hand, the two survivals of the fittest.

#### SLOWER PRINTING.

BY GEORGE W. ENNIS.

The quality of slowness in printing is a disposition in a negative which most of us would rather see honored in the breach than in the observance. It is not our purpose, therefore, to defend any tardiness in the negative to yield silver prints, but merely to suggest that our haste frequently prevents us getting the best results.

My experience has been that in the great majority of cases the best negatives are not of a character demanding printing in the strong direct rays of the sun.

On the contrary I have found, and most of you will no doubt agree with me, that what might be called rather weak negatives yield the most pleasing and delicate prints if properly treated.

I recently came in possession of a series of negatives in which the gradations of light and shade were perfect, the high-lights fine and soft and the shadows clear and transparent ; altogether they looked brilliant, besides the color was such as generally yields rapid prints.

Anxious to secure impressions, it was

thought that they could be printed in the direct sun. They did print rapidly as I expected, but the results were disappointingly flat and tame and without a particle of the expected brilliancy which the negatives promised.

I at once discovered that the printing was being hurried too much. On re-examining the negatives I found that the brilliancy was not obtained by any great intensity in the lights and shadows, but that the contrast was only relative, and that the highest light was strong only as compared with the deepest shadow, neither of which was absolutely strong. There was a beautiful gradation from the light to the shadow. In a word the negatives were brilliant though weak.

Accordingly we treated them differently, and printed them under two or three thicknesses of tissue paper and ground glass, and out of the direct sunshine. Of course it took a much longer time, but patience was rewarded with the perfect work. The prints were counterpart presentations of the negatives with all their virtues.

I am inclined to think that a *good* negative should never be printed in the sun, of course we get hold sometimes of very dense fellows but they can seldom be called good, hence we have no other recourse than direct sun.

Our gelatine negatives, I know, are very much slower than the wet collodion in yielding impressions, and we are often put to straits to get good results—by fuming the paper longer or varying the strength of the silver bath, etc., but even with gelatine it is generally better not to print in the direct rays of the sun.

It has been found that the printing department demands the same amount of attention as the sky light or the dark room, if we have any respect to good work. Better results we know are obtained during the late spring months and in the summer and early fall than during the winter months unless an enclosed printing arrangement is used, and the temperature of the printing and silvering rooms be kept about 70°, not only during the working days but over Sundays.

An enclosed printing room will be found to pay better in the results than one

opened to the bleak winter winds; for besides the protection it affords from the glare of light, it allows the printer, whose impressions to cold are quite as lively as the operator, to give more attention to the work, instead of being obliged to lose time to rub his benumbed fingers after handling the cold brass springs of the frames. In a point of economy there is also an advantage. Less silver is required, less gold for toning, and as a consequence more good prints to the sheet with less waste, because the printer is kept comfortable and in a good humor, supplied with all the conveniences to do good work.

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We give our readers a reprint in full, in the present number, of an admirable paper read by P. H. Emerson, B. A., M. B. (Cantab) before the London Camera Club.

The writer, who is evidently a practical man and understands thoroughly his subject, has packed so much good thought into a small space that what he says not only deserves careful reading, but may be re-read with advantage.

The reference which he makes in his opening paragraphs to that kind of misapplied writing which is so abundant and so annoying to artists, and which he characterizes as opinions evolved from the writer's inner consciousness, will be appreciated by all practical workers who are liable to suffer from such unsound criticism.

The critic to whom he refers at the opening of the second paragraph is Mr. Ruskin. His remarks seem severe, but we think they are just. Mr. Ruskin, owing to his genius as a writer, has taken such a hold upon the reading public, and has been so severe and unjust in his censure of the work of eminent painters of the past and the present, that he has misled thousands and caused many heart-burnings to struggling talent which should have had a kind word of encouragement.

We cannot say that we fully agree with Mr. Emerson in the comparatively low estimate which he sets upon the works of Michael Angelo, but this may be readily overlooked in any one who so vigorously upholds the classical in Art, and careful

attention should be given to what he says regarding the comparative values of real lights and shadows, and the same, as represented in paintings or photographs, as in photographs especially, so much is dependent for their finish and beauty upon their refined gradations of tones.

And lastly we would say that he has put the whole subject in controversy now about art and photography, in a nut shell, in what he says about pictorial art being man's expression of the beautiful in nature by pictures, and any art being a fine art which can express these beauties in the best way.

Indeed, we think that, in reading, one rarely comes upon an example of so much good food for thought, packed into so small a space, and accompanied with so much good sound practical common sense, as in Mr. Emerson's paper.

In photography, as in other studies, it is too often our habit to be led by the opinions of the latest authorities only, and to neglect the great original sources, where in the glow of the all important discovery of the time, many a good idea, casually struck off, is suffered to cool and lie forgotten for years.

We are sure there are many such undeveloped suggestions which the masters in our art have left for us to work up, and which may reward us with a discovery.

He who merely desires to gather information for its practical value of dollars and cents does well enough to pursue the shortest course, but the student who honestly wishes to advance the science, will not hesitate to go back upon the path, and glean the scattered truths.

A few weeks ago, Dr. Boudet, of Paris, according to the communication of M. Thouroude (*British Journal of Photography*, March 12th, 1886), desiring to photograph the electric spark, found that when two five franc pieces were laid upon a gelatine bromide plate, an electric current formed, and sent through the plate; on development not only the image of the spark was seen, but also a good negative of the two pieces of money.

This was thought to be the stepping stone to some remarkable discovery in photo-electricity, and many experiments were made.

A five franc piece was laid upon a gelatine bromide plate, and an electric current sent through it without a visible spark. When developed, an excellent negative was obtained.

A signet, or private seal in metal, was placed upon a sensitive plate, the current sent through and the plate developed, with the same results.

A photographic positive on albumenized paper, was laid upon the sensitive surface, a current passed, the plate developed, and a negative obtained.

Dr. Boudet has made these results public in order that some person may continue his experiments, not having himself the leisure.

No doubt some important practical discovery may follow from the facts thus made known, but, if we are not mistaken, similar if not identical results were had as far back as 1842, by Hunt, Moser and Karsten.

The investigations of Karsten were published in Poggendorff's *Annalen*, No. 2, 1842.

The images of coins were received upon glass and metallic plates by means of electric currents, but the experimenter was unable to permanently fix the impressions.

Had gelatine plates been known, the results of Dr. Boudet would have been anticipated by forty-four years.

RECENTLY doubts have been expressed as to the permanency of gelatine as compared with wet collodion. It is thought that certain chemical combinations, not associated with collodion take place, which tend to the destruction of gelatine negatives.

Practical workers, however, are of the opinion that gelatine, if properly treated, will be found quite as steadfast as collodion, and the blame for deterioration is laid altogether to the carelessness of the manipulator, who, spoiled by the rapidity with which impressions are made on the very sensitive film, becomes impatient at

the tardy fixing, and removes the plate before the hypo has thoroughly acted, which is not always indicated by the clearing up of the plate. Of course under such treatment no gelatine plate will keep any time. Experience should teach us that however rapid gelatine may be in responding to a weak impression it must be humored a great deal more in the hypo. than collodion, and be allowed sufficient time to work out its own salvation.

The question of the permanency of gelatine reminds us that we were lately shown a number of panel albumen prints, which had been displayed in a room for two years without any protecting glass.

Those which had been subjected to the ordinary burnishing operation were much faded, and the high lights decidedly yellow, while those having a highly polished glace surface, effected with collodion or gelatine, looked quite new and brilliant.

The taste for highly glossed prints is declining—an evidence, perhaps, of an advance in artistic judgment—but undoubtedly the polished surface does contribute greatly to the permanency of the print. It seems that it is not so much the action of light which causes the yellowing and fading, as the penetration of sulphurous gases, which are kept out by the protecting medium. Bromide paper has not been long enough in use to judge of its permanency, but the probabilities are that it is less liable to change than albumenized silver. We have noticed a deterioration in the albumen around the margins of glass transparencies, where it has been used as a substratum for the collodion. On the whole, so far as permanency is concerned, collodion, as a vehicle for silver, seems to be the safest.

In recalling some of the pleasures we had in looking at the pictures displayed at the exhibition of the Photographic Society of Philadelphia, we remember a number of beautiful examples of vigneted landscapes. If photographers only knew the charm given to a landscape picture by vignetting we think it would be more generally practiced.

Frequently a well chosen view loses some-

what of its good effect by the hard rigid lines by which its margins are bound. The vision comes to a sudden and unpleasant stop when it reaches these barriers, instead of being allowed to pleasantly wander off into indefiniteness, just as it does in nature. We are so accustomed to see a photographic picture bound around by the four lines of the ground-glass screen of the camera that we expect, as a matter of fact, the parallelogram.

The photographer will find vignetting a great improvement in views containing unavoidable straight lines near the margin, as lines of buildings, fences, etc. All such objectionable features can thus be excluded.

The method of vignetting is so simple that any one may do it, and will be surprised to find how much it will improve an indifferent view.

Another thought is suggested by the Exhibition. Why do photographers strike a higher horizon in their pictures than artists? Generally the sky in a photograph occupies not more than one-third of the picture, frequently less.

Artists whom we have observed sketching out doors generally sit low, so that the level at which they view the scene is much lower than that at which the tripod is generally fixed.

We tried the effect and were surprised to see how the view was improved. A barren stretch of uninteresting foreground was greatly foreshortened and the whole view rendered more beautiful than from a higher plane.

We suppose the photographer wishes to avoid too much blank sky, but we think an overstock in sky is preferable to a monopoly in dull foreground, especially as we can easily liven up an interest in the picture by printing in clouds.

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It is a subject demanding a scientific treatment, and as the author of these papers handles it in a masterly manner, we look for valuable results from his investigations.

attention should be given to what he says regarding the comparative values of real lights and shadows, and the same, as represented in paintings or photographs, as in photographs especially, so much is dependent for their finish and beauty upon their refined gradations of tones.

And lastly we would say that he has put the whole subject in controversy now about art and photography, in a nut shell, in what he says about pictorial art being man's expression of the beautiful in nature by pictures, and any art being a fine art which can express these beauties in the best way.

Indeed, we think that, in reading, one rarely comes upon an example of so much good food for thought, packed into so small a space, and accompanied with so much good sound practical common sense, as in Mr. Emerson's paper.

In photography, as in other studies, it is too often our habit to be led by the opinions of the latest authorities only, and to neglect the great original sources, where in the glow of the all important discovery of the time, many a good idea, casually struck off, is suffered to cool and lie forgotten for years.

We are sure there are many such undeveloped suggestions which the masters in our art have left for us to work up, and which may reward us with a discovery.

He who merely desires to gather information for its practical value of dollars and cents does well enough to pursue the shortest course, but the student who honestly wishes to advance the science, will not hesitate to go back upon the path, and glean the scattered truths.

A few weeks ago, Dr. Boudet, of Paris, according to the communication of M. Thouroude (*British Journal of Photography*, March 12th, 1886), desiring to photograph the electric spark, found that when two five franc pieces were laid upon a gelatine bromide plate, an electric current formed, and sent through the plate; on development not only the image of the spark was seen, but also a good negative of the two pieces of money.

This was thought to be the stepping stone to some remarkable discovery in photo-electricity, and many experiments were made.

A five franc piece was laid upon a gelatine bromide plate, and an electric current sent through it without a visible spark. When developed, an excellent negative was obtained.

A signet, or private seal in metal, was placed upon a sensitive plate, the current sent through and the plate developed, with the same results.

A photographic positive on albumenized paper, was laid upon the sensitive surface, a current passed, the plate developed, and a negative obtained.

Dr. Boudet has made these results public in order that some person may continue his experiments, not having himself the leisure.

No doubt some important practical discovery may follow from the facts thus made known, but, if we are not mistaken, similar if not identical results were had as far back as 1842, by Hunt, Moser and Karsten.

The investigations of Karsten were published in Poggendorff's *Annalen*, No. 2, 1842.

The images of coins were received upon glass and metallic plates by means of electric currents, but the experimenter was unable to permanently fix the impressions.

Had gelatine plates been known, the results of Dr. Boudet would have been anticipated by forty-four years.

RECENTLY doubts have been expressed as to the permanency of gelatine as compared with wet collodion. It is thought that certain chemical combinations, not associated with collodion take place, which tend to the destruction of gelatine negatives.

Practical workers, however, are of the opinion that gelatine, if properly treated, will be found quite as steadfast as collodion, and the blame for deterioration is laid altogether to the carelessness of the manipulator, who, spoiled by the rapidity with which impressions are made on the very sensitive film, becomes impatient at

the tardy fixing, and removes the plate before the hypo has thoroughly acted, which is not always indicated by the clearing up of the plate. Of course under such treatment no gelatine plate will keep any time. Experience should teach us that however rapid gelatine may be in responding to a weak impression it must be humored a great deal more in the hypo. than collodion, and be allowed sufficient time to work out its own salvation.

The question of the permanency of gelatine reminds us that we were lately shown a number of panel albumen prints, which had been displayed in a room for two years without any protecting glass.

Those which had been subjected to the ordinary burnishing operation were much faded, and the high lights decidedly yellow, while those having a highly polished glace surface, effected with collodion or gelatine, looked quite new and brilliant.

The taste for highly glossed prints is declining—an evidence, perhaps, of an advance in artistic judgment—but undoubtedly the polished surface does contribute greatly to the permanency of the print. It seems that it is not so much the action of light which causes the yellowing and fading, as the penetration of sulphurous gases, which are kept out by the protecting medium. Bromide paper has not been long enough in use to judge of its permanency, but the probabilities are that it is less liable to change than albumenized silver. We have noticed a deterioration in the albumen around the margins of glass transparencies, where it has been used as a substratum for the collodion. On the whole, so far as permanency is concerned, collodion, as a vehicle for silver, seems to be the safest.

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### THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

A regular meeting of the Society was held Wednesday evening, April 7th, 1886, with the President, Mr. Frederic Graff, in the chair.

Mr. Graff announced to the Society the death of their fellow member and late President, Mr. Joseph W. Bates. The loss to the Society was one that all must deeply feel, particularly the older members. Mr. Bates became a member in 1863, and during his long connection with the organization had endeared himself to all with whom he came in contact, for his uniform kindness and courteous manner. The older members were indebted to him for much valuable aid in the earlier days of photography in this country, when his frequent visits to Europe afforded him facilities for collecting information which he was always ready to impart to his fellow members.

Mr. Ellis, who joined the Society about the same time as Mr. Bates, spoke of the help so frequently given by him to others interested in photography in the days when so much was new and the opportunities of getting information on the subject were far less frequent than is the case at the present day.

The following resolutions were offered by Mr. Browne, and carried unanimously.

"The Photographic Society of Philadelphia having heard of the death of their late fellow member and former President, Mr. Joseph W. Bates, and desiring to express their feelings of regret and respect for their deceased associate, offer the following Resolution :

*"Resolved,* That in the death of Mr. Bates the Society has lost a most attentive and energetic member, and one whose genial character endeared him to all the officers and members of the Association. His resignation of the Presidency of the Society, after a service of seven years, was a source of regret when accepted. His removal by death will be an abiding subject of sorrow as often as recalled.

*"Resolved,* That a copy of this minute be entered on the records of the Society, and an attested copy be sent to the family of our deceased member."

On behalf of Mr. William Bell, the Secretary presented a large photographic portrait of the late Mr. Bates, which was received with a vote of thanks, and ordered to be framed and hung in the room of the Society.

The resignation of Mr. I. Norris Cochran from active membership was presented and duly accepted.

The Committee on Membership announced the election of Mr. J. Hunter Ewing as an active member.

Through the question box it was asked, "Does burnishing prevent prints from fading?"

Mr. Shoemaker considered it a preventative, having never known a burnished print to fade.

Mr. Rau thought enamelling would prevent fading, as it protected the picture from the air, but did not think burnishing would have this effect.

Dr. Jordan had known burnished prints which hung in the sun, to fade very materially. He could not say how thoroughly they had been washed.

It being suggested that the paper itself was liable to turn yellow in time, Mr. John Sartain said that an engraving would sometimes turn yellow in that part of the paper around the margin which had not been under pressure from the plate, while the high lights of the engraving remained white. The compression of the surface of the paper by the plate seemed to close the pores, rendering it less susceptible to the action of the air, and such gases as would change its color.

The question being asked if hyposulphite of soda was used in making paper, Mr. McCollin stated that it was not used in paper intended for photographic purposes. The Rive's paper was made of flax bleached in the sun.

A second question in the box asked : "What film should I use in micro-photography (reduction through microscope), collodion or albumen, or both, and how should it be salted?"

Mr. Browne had used both albumen and washed emulsion, but considered albumen the best.

Mr. Fassett stated that Mr. Isaac Rehn,

who formerly did a great deal of work of the kind, used collodion with malt preservative, which he found superior to anything he could get.

By request of the Society, the paper for the evening on "Æsthetics and Photography, by Mr. Xanthus Smith, was read as follows:

#### ÆSTHETICS AND PHOTOGRAPHY.

When the compliment was paid me of asking me to read a paper to you this evening, gentlemen, I consented, only partially realizing the difficulty of finding matter that would be at all interesting to you, and as I entered upon the work of its preparation I began to appreciate fully my entire inability to bring forward anything worthy the attention of the members of this society, composed as it is of gentlemen who by cultivation, by the most genuine research, and by that best kind of practical knowledge which is got by a love of a pursuit and large means and time to devote to it, have placed the Photographic Society of Philadelphia at the very front in the art and science of photography. And I must here say that this enviable rank is of no sudden growth, it has not been newly taken on like so much connected with photography now in these days when everybody is practicing it. The Philadelphia Society has grown up with photography from the infancy of the science; many of its members who are with us and some who have passed away, men of the first ability in their professions, have traveled with it throughout its entire progress, investigating, discovering, proving, and building it up step by step to its present advanced position. So that in coming before you this evening to talk about Art in its connection with photography I would like what I have to say to you upon the subject, taken as a mere turning over of ideas, and not as the laying down of any fixed rules which are to be supposed to be new to you or considered paramount, for I feel that in this age of advancement, when so many old doctrines and theories are being superseded by views that stand the light of modern research better than the old ones, one must be careful in the matter of Art too, along with the rest, that they

look broadly upon the subject, and investigate well all new ideas that come in, no matter how much they may appear to conflict with what has been previously established, and at my age, and trained as I was upon views which constituted a very different standard of taste from that prevailing at the present time, I feel that there is a danger of old fogeyism, and I would probably not have presumed to occupy your time at this meeting, had it not been that I feel by a bringing together and comparison of views, new ideas are often suggested which may be useful.

Most of the writing published about Art now, is in the direction of impressionism, that is to say, critics have built up certain themes and theories about associations of ideas with Art, religious, moral, or emotional, which really have nothing whatever to do with the general ruling principles that govern beauty of form and design. These critics laud the productions of particular artists who are doing their works in such new and strange ways that the public are attracted and mystified by them, and would, I think, generally condemn them were it not that what they read upon the subject of Art is written by persons who do not understand anything of the practical business of the painter. I say practical business, for much as the ultimate purpose is to appeal to the sentiments only, there is notwithstanding, along with it much of the earth earthy, even to our invaluable ochres and umbers, and certain mechanical dexterity in their application, just as there is of nice chemical action and careful manipulatory details about photography. To exemplify strongly what I mean, some of the most earnest and enthusiastic of the Pre-Raphaelite painters, whose aim you know it was to attain the utmost purity of sentiment, considering all rules of taste and beauty as sensuous and degrading to high art, went so far as to exclude the pigments made of earths from their palettes, and used only vegetable and the most refined chemical colors upon pure white canvas, which was a perversion of the work of painting so far into sentimentalism that it lost its true character and became a strange sort of symbolic illumination. Yet see how much

captivating writing there was published about the work of these painters, what enormous prices were paid for their works by those who thought they understood them, and how the majority were mystified by them, having too much good taste and sense to feel that they were right, yet fearing to raise their voice in condemnation of them.

This vague and mystifying writing about Art is a thing that is naturally to be looked for. It is the consequent outcropping of and overdoing of views which are excellent in their origin. As people advance in cultivation, certain refined and poetic ideas are developed which require response in literature and music and Art. A mere transcript of a scene under ordinary circumstances is not sufficient to them, consequently painters strive to clothe their works with certain peculiar and transient effects or poetic sentiments that they may prove congenial to the instincts and demands of such elevated tastes. Now it is easy to be seen that it soon becomes a difficult matter to draw the line where the reasonable ends and the visionary begins in such matters. With the universal disposition which we see for people to go to extremes, it immediately becomes evident that we must have a general rushing after some great exponent of such matters for the time being ; and if this exponent happens to be a man of genius, like Mr. Ruskin, his influence upon matters of taste is immense, and the few who, though willing to admit the truth of a great deal of that which is set forth, cannot by any means go so far, are either trampled out in the rush of popular opinion or else left standing alone in the rear helpless and peculiar. I think I may exemplify the matter somewhat by a reference to the subject of etching. You all know what an interest has grown up within the past ten years in etching. The exhibitions that we have been shown, the money that has been spent in making collections, the keenness with which artists and amateurs have set to work to produce and the volumes that have been published upon this subject. Now etching is eminently a vague and suggestive Art, it is, gentlemen, the very antipode of your Art, and in this very vagueness and suggestiveness consists

its strength, with these impression extremists, for on its incoherent scratchings they may build endless wonders of imaginative Art. And in their wild enthusiasm they would stamp out all that is truly excellent and really difficult of attainment in etching, namely, the power to draw correctly, a knowledge of perspective, and the principles of composition, a subtle appreciation of the value of lines in their greatest delicacy and force, and adaptation to the representation of various textures, together with a happy selection of subjects adapted to the Art. The amount of skill and practice required to do this, they say, reduces it to mere professional work, and robs it of those rare qualities which can only come from an exalted imagination through a hand less mechanical. I think the day is probably not far distant when these learned critics will turn their attention upon photography. All that is excellent in the Art will be cast out as mere mechanism, and the ill-focussed, fogged, and blemished only, will be held up as works of Art. The more fog there is, the more room will there be for the play of the imagination, and consequently the greater will be the artist. What a glorious period will not this be for the makers of dry plates, might not they and the stock dealers do well even now to be storing up their unlucky brands for such time?

Well, to again be serious, we will turn our attention to the discussion of principles, which, although they will bring us down from the visionary to the practical, and stamp us as mere workmen, will, I think, make us none the worse for that. Some of the greatest artists of old, whose works have stood the test of time and sound criticism, were, to a great extent, practical workmen. They knew every part of the business of a painter thoroughly, many serving a sort of apprenticeship at it, grinding the paints and preparing the canvas. They drew from the antique and from life in the most careful manner, and we see in the earlier works of all of them a painstaking thoroughness, not only in their compositions but in their mode of using the materials. Searching out all that they could find of the remains of the best Greek Art, appreciating its excel-

lencies, building upon it and striving to improve upon it. Here was a tangible reality built up in Art, which, as I say, has stood the test of centuries. Certain principles were wrought out, and their truth and excellence made manifest in the works of DaVinci, Michael-Angelo, and Raphael, and the best productions of the Dutch school, which, instead of being superseded by anything better to-day, seem rather to stand as a beacon to the few who can appreciate them, in the wild sea of theories and isms. These principles constitute truth and grace of design, beauty of composition, and harmonious and agreeable effects of light and shadow, qualities that it is desirable we should perceive in nature, either by our natural instincts or by training. I say by our natural instincts, because I believe there are many persons born with natural taste or power of perception of the beautiful and picturesque, just as there are those born with talent for music or literature, who, though they may never have had opportunities for training in these arts, nevertheless will always search out and appreciate that which is most excellent in them. And where such inborn taste exists with those turning their attention to Art as it may be practiced with the camera, even a slight amount of time bestowed upon the study of the best art principles which have been established, will add immensely to the enjoyment of the pursuit, by the interest that is aroused to search out or build up good effects, or the gratification of having them suddenly presented to us as is so often the case in nature, and above all the satisfaction of feeling that we are working in accordance with certain great principles or truths.

Now, as I said in the beginning, gentlemen, you are all so familiar with these Art principles, as attainable in photography, that it would be folly for me to occupy your time by going into their details in this paper. I will therefore avail myself of the arrangements you have kindly made for showing a number of views with the lantern. I have selected a number of fine examples of art, both in landscape and figure subjects, the works of eminent painters, of which your member, Mr. Wil-

liam H. Rau, has been so kind as to make me slides. These I propose showing with a selection of slides made from scenes taken from real life and from nature, by members of this Society, and shall, I think, be able to show in the productions of the members the same art principles which make the works by the eminent painters so attractive and so enduring in their excellence.

Mr. Smith then proceeded to show a number of slides made from fine engravings of landscapes by Linton, Stanfield, Harding and Turner, Royal Academicians, views of places in England or on the continent of Europe, in which, in addition to fine composition, there is displayed the most agreeable arrangements of light and dark in various proportions.

Amongst the figure subjects shown was one by Sir David Wilkie, R. A., "Sunday Morning"—a remarkably choice piece of composition and effect. The subject contains three figures: an old man, about to shave, sits in a high back chair by a fireplace, strapping his razor. Beside him is a table with a looking glass leaning against some books piled up to support it. On the other side of the table a young woman is washing a boy's face, the basin set upon a chair. The surrounding accessories complete the story of preparation for church. "The picture is divided diagonally," Mr. Smith said, "nearly half and half into half light and half shadow, which gives great breadth of effect. The concentrated high lights are all near the centre, and very skilfully disposed. It may be said to be unique as a work of its kind, and, to a great extent, comes within the scope of the amateur photographer to imitate—the life and still life objects which comprise it, being about us in our homes in great varieties, and only wanting the pains and taste that can arrange or group them."

Paramount in the examples shown were the following qualities: a large proportion of half light and half shadow, a few concentrating high lights of agreeable forms and grouping well, and a corresponding amount of deep shadow, some portion rather deeper than any other in the picture—the highest light and deepest shadow com-

ing together in agreeable forms, and a considerable amount of quiet, undisturbed space to give what artists call repose.

The examples shown from actual scenes, the work of members of the Society, the speaker said, "comprised a great variety of remarkably original and picturesque subjects, in which there had been so much artistic knowledge and taste used in the selection of subject, choice of point of view in the landscapes, grouping in the figure pieces, and proper effects of light and shadow, that it would seem very clear that it could only be the most one-sided and prejudiced mind that would deny a connection of art with photography or a claim of any one working with the camera to the title of artist."

In making especial notice of the following work, Mr. Smith said; "It must be understood as in no way disparaging to that not shown or mentioned, these particular views having happened to attract my attention during a brief visit to the Exhibition held the past January at the Pennsylvania Academy of Fine Arts."

A very artistic and beautiful vignette by Dr. Piersol—subject: a close wood and creek scene, Upper Wissahickon—having the qualities, good composition, breadth of effect, atmospheric perspective and that characteristic which is akin to what artists call picturesqueness and openness of touch in their work, in contradistinction to solidity.

By Mr. Galoway C. Morris, a remarkably choice extended landscape view—"Lake George." Fine composition, good effect of light and dark, a very fortunate proportion of half tones with the most suitable amount of deep shadow in the proper place, and so much detail in the masses of shadow, that while their power and breadth are not lost, they are prevented from being blank spots.

"Departed Power," by Mr. J. C. Browne, is an example showing how, by judicious selection of point of sight, a very fine picturesque composition is made of what might be a stiff and offending subject. the great old mill, with its wheel and a fine tree, grouping in the most varying and agreeable manner.

A beautiful piece of grand landscape, "Via Mala," by Dr. Ellerslie Wallace., having in addition to good composition and breadth of effect the most infinite variety of finished detail and exquisite perspective. The impression of grandeur of subject is remarkably well given. It was a matter of regret to Mr. Smith that want of time did not permit his showing more than he did of Dr. Wallace's admirable work.

Mr. William H. Rau's view at the entrance to the Zoological Gardens, this city, is a remarkable instance of fine landscape perspective. The character of the scene, with the picturesque foreground buildings and one finished passage of distance succeeding another into the extreme distance, miles off, together with the skilful treatment, by which the most intense shadow is near the immediate foreground and the tones die off by delicate gradations to the horizon, make it, indeed, a finished work.

By Mr. John Bartlett, an upright scene on the Wissahickon, forming, from its admirable composition and fine gradation of tones, a complete and beautiful picture.

A scene on the Wawaset, by Mr. J. G. Bullock, was remarkable, in addition to good composition, for exquisite gradations of tones and the way in which the figures had been disposed, a black horse in a cart forming a perfect focussing spot of dark, and giving a proper value to all the other shadows.

An admirable picturesque study on the Brandywine creek, by Mr. Robert S. Redfield. The subject well chosen and of a character particularly well adapted to photography. It has remarkably fine gradations of tones from the foreground to the distance, and the placing and posing of the very suitable figure shows the best artistic skill.

Of the work of Mr. George B. Wood, of which there was rather more shown than that of other members, Mr. Smith, of course, as a fellow painter, saw much to commend in the skilful way in which he had overcome the obstacles incident to the pursuit of art, and by his knowledge and perseverance—for he is an indefatigable worker—has got together an immense number of

fine effects of the most varied and interesting character, many of which are being published by wood engraving, and will assuredly do a great deal towards establishing photography in its proper rank as an art.

The pictures in illustration of Mr. Smith's paper were projected on the screen by means of a pair of Mr. Fred. E. Ives' new and compact form of dissolving lanterns, using the Etho-oxygen Light, devised and patented by himself; all the apparatus worked most admirably in the hands of Mr. Ives.

Mr. Coates mentioned that having failed in an attempt to take a church interior on a glass plate, owing to halation, he had tried gelatine paper with great success, and a perfect absence of the trouble.

Mr. Pancoast presented on behalf of Mr. W. K. Burton, of London, a portion of his exhibit at the late Exhibition. It was received with a vote of thanks.

Mr. Corlies presented a lantern slide portrait of the late Mr. Bates, which was an exceedingly good likeness, and for which the thanks of the Society were tendered.

Adjourned. Fifty members and three visitors present.

ROBERT S. REDFIELD, Secretary.

#### WINDOW TRANSPARENCIES WITH GELATINE PLATES.

BY EUGENE ALBERT.

It is not necessary to expatiate upon the beauties of glass positives over paper prints, since every one knows that they are the only means by which the rich detail and softness of lights of a fine negative can be fully translated.

The question is which yields the better results, wet or dry. I must confess that I have not had much success in the application of gelatine to lantern slides, but feel somewhat consoled at my failures when I read in your journal that professionals find a falling off of the virtues of gelatine when mustered into this particular service.

When I gave sufficient intensity to make them look well to the eye, they were always too dense for the lantern; besides, no mat-

ter what devices I used to secure thinness, and at the same time detail, by making the slide thin and redeveloping, there was always a want of clearness in the high lights which seems an inherent fault of gelatine—one of its original sins, let us hope, not past redemption, however.

With the experience of these failures, I naturally supposed that wet collodion would also yield superior results for window transparencies, but I was agreeably surprised to find that positives made with gelatine far surpassed my best results with wet collodion, to say nothing of the great convenience in the use of dry plates. Fortunately, the density which gelatine demands to be effective is no drawback in window transparencies.

Perhaps my experience may be of some value to others, as I did not follow any special formula given in books, but experimented with a view of getting the best results.

I found that there are two things to secure to produce a beautiful transparency—softness of the high lights and clearness, yet sufficient density of the shadows.

I found that the softness of the high lights could only be obtained by over-timing. This, of course, was accompanied with the increase of detail in shadows, but when the ordinary developer was used, the whole picture was necessarily flat and tame.

When the time was a little short there followed that unpleasant harshness of the high lights which brings forth the remark from old ladies who attend lantern shows: "Is that snow on the roof?"

Accordingly, I judiciously overtimed and used the slowest plates made—Carbutt's A. The exposures were made before an ordinary gas flame, at about twenty inches distance, and if the negatives were of a character requiring ten seconds exposure, I gave 18 seconds, and sometimes 20 and 25, and used the following developer. I endeavored to find out how much iron I could safely use with the oxalate during a rather long development without decomposing the solution.

I found that the proportion of one part of a saturated solution of Proto-sulphate of Iron to 5 parts of a saturated solution of

Oxalate of Potassa was about as far as I dare go. Of this mixed solution of Iron and Oxalate (1 to 5) I took 1 part and added 8 parts of water to it.

You see, I thus had a developer weak, but containing a goodly proportion of iron.

Now I found that even with this weak developer I sometimes over-timed, but rather than lessen the time of exposure, I preferred adding restrainer. To every ounce of the developer (1 to 8) I added 10 drops of a ten grain solution of Bromide of Potassium.

Now, my further experience was that with the excess of iron there was a tendency to clog up the shadows which sometimes even the bromide could not keep clear.

I did not want to diminish the proportion of iron, because when I lessened the amount I could not get the fine warm brown tones. I preferred to add something to keep the shadows clear. This I found to be citric acid and sugar—four drops of solution (10 grains to ounce) of citric acid, two drops of solution of sugar (10 grains to ounce) to every ounce of developer. But unfortunately these clearers are also retarders. So you see the great necessity of over timing with a weak developer so restrained. Sometimes it took as long as twenty minutes to develop one transparency, but, of course, a number at a time can be put in a large dish and developed just as readily and as well as one plate.

I used plenty of developer to well cover the plates, but always a fresh dose with each plate or with each batch, if it is desired to develop several at a time. The excess of iron causes the solution to decompose during the somewhat long development.

The iron gave the warm brown tones and the bromide, citric acid and sugar cleared up the shadows beautifully; indeed, sometimes I was obliged to diminish the amount of the citric acid and sugar to one-half, to prevent too great clearing up of the shadows for window transparencies. The plates, after detail was secured, were allowed to remain in the developer until sufficient intensity was secured. This is best determined with any brand of plates by develop-

ing and fixing a single plate. The fixing was effected with the ordinary strength of hypo.

I believe that the clearing action of sugar and citric acid (a sort of weak lemonade treatment) will yield, with gelatine plates, slides suitable for the magic lantern.

Good results are obtained by other methods, perhaps less troublesome than the above, but as the transparencies made according to the formula given have been much admired, and many inquiries made as to the *modus operandi*, the above facts are given. Personal experience is always interesting, whether of any value or not.

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At the last meeting of the Photographic Society of Philadelphia, the sad news was made known of the death of Mr. Joseph W. Bates, who for seven years occupied the position of President of the Society.

Mr. Bates was a gentleman of high culture and intellectual ability, kind and genial in his nature, and always willing to extend a helping hand to those who desired to avail themselves of the valuable fund of information on photographic matters which he had acquired during a period of over twenty years.

The Society, as well as all who had the pleasure of his acquaintance, feel deeply his loss. An appropriate minute, expressive of the deep regret and sorrow of the Society, was entered upon the records.

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**BOOK NOTICE.—*The Amateur Photographer*,** by Ellerslie Wallace, Jr., M. D., published by Porter & Coates, Philadelphia.

It is refreshing, a positive treat to read such a book as the one before us, accustomed as we are to see so many scissors and paste-pot books, intended for the edification of beginners in photography.

The author is under no restraint, he writes for no interest, unless it be for the love of his Art; and the clear straight-forward manner in which his ideas are conveyed shows a thorough familiarity with all the details of the various processes, only had by practically laboring in the field as a delightful occupation.

The style of the book from a literary point of view is concise, smooth, and simple, and what is essential in an elementary work, entirely free from any obscurity or ambi-

guity. The author knows thoroughly what he is writing about and has no need to hide ill-conceived ideas in an array of words.

Though thorough in practical suggestions he justly claims for photography a higher place than mere technical excellence accords and shows that it occupies a position in the rank and file of Art not the lowest.

We are glad that a new edition of the book gives us another opportunity of calling attention to it. There are two entirely new chapters added, one on Microscopic Photography and the other on the important subject of Paper Negatives.

The printing is excellent and the binding handsome, and each copy is embellished with a choice landscape subject.

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1—1·4 Size Darlot Gem Lens . . . . .	3 00
1—11x14 C. C. Harrison, Central Stops. . . . .	35 00
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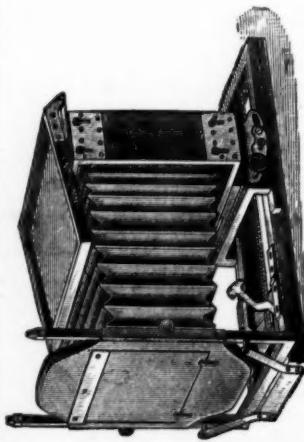
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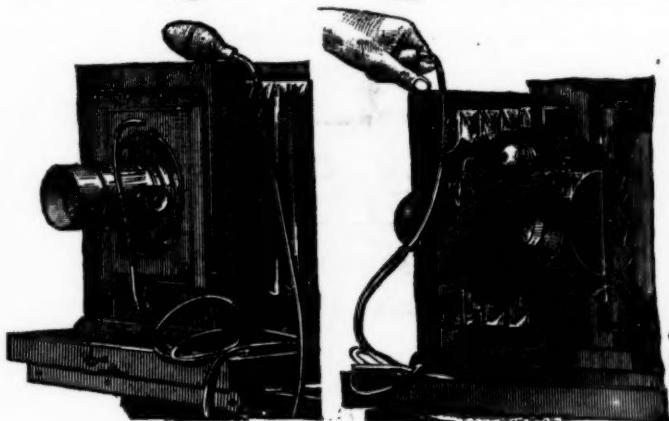
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